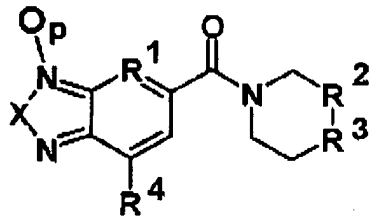
In the claims:

1. (Previously presented A method for treating or reducing the likelihood of cognitive impairment as a result of acute or chronic sleep deprivation, comprising administering to a subject or patient in need an effective amount of an AMPA receptor potentiator.

2. (Original) The method of claim 1 wherein the AMPA receptor potentiator is a compound according to the structure:



wherein X = oxygen or sulfur; R^1 is selected from the group consisting of -N=, -CR=, or -CX=; R^2 is selected from the group consisting of $-(CRR')_n-$, -C(O)-, -CR=CR'-, -CR=CX-, -CRX-, -CXX'-, -S-, and -O-, and R^3 is selected from the group consisting of $-(CRR')_m-$, -C(O)-, -CR=CR'-, -CRX-, -CXX'-, -S-, and -O-; R^4 is R or X; X and X' are independently selected from -Br, -Cl, -F, -CN, $-NO_2$, -OR, -SR, -NRR', -C(O)R, $-CO_2R$, or –CONRR', wherein two groups R or R' on an individual group X, or on two adjacent groups X, may together form a ring; and

R and R' are independently selected from (i) hydrogen, (ii) C_1-C_6 branched or unbranched alkyl, which may be unsubstituted or substituted with one or more functionalities selected from halogen, nitro, alkoxy, hydroxy, alkylthio, amino, keto, aldehyde, carboxylic acid, carboxylic ester, or carboxylic amide, and wherein two such alkyl groups on a single carbon or on adjacent carbons may together form a ring, and (iii) aryl, which may be unsubstituted or substituted with one or more functionalities selected from halogen, nitro, alkoxy, hydroxy, aryloxy, alkylthio, amino, keto, aldehyde, carboxylic acid, carboxylic ester, or carboxylic amide;

m and p are, independently, 0 or 1; and n is 0, 1 or 2.

3. (Original) The method according to claim 1 or 2 wherein said AMPA receptor potentiator is:

1-(benzofurazan-5-ylcarbonyl)piperidine;

1-(benzofurazan-5-ylcarbonyl)-4-hydroxypiperidine;

1-(benzofurazan-5-ylcarbonyl)-4-cyanopiperidine;

1-(benzofurazan-5-ylcarbonyl)morpholine (BCM); or

1-(benzofurazan-5-ylcarbonyl)-4,4-difluoropiperidine.

4-13. Canceled.

14. (Previously presented) A method according to any of claims 1-3 wherein cognitive impairment is a result of acute sleep deprivation.

15. (Previously presented) A method according to any of claims 1-3 wherein cognitive impairment is a result of chronic sleep deprivation.

16. (Previously presented) A method according to any of claims 1-3 wherein the subject is a worker whose duties cause an interruption in normal sequence or duration of sleep cycles.

17. (Previously presented) A method according to any of claims 1-3 wherein the subject is a person suffering from circadian rhythm disruption.

18. (Previously presented) The method according to any of claims 1-3 wherein the subject is a patient suffering from sleep disruption as a result of disease symptomatology.

19. (Previously presented) The method according to any of claims 1-4 wherein the subject is a service animal whose performance is impaired by sleep deprivation.

20-34. (Canceled.).

35. (Previously presented) The method of claim 1 wherein the AMPA receptor potentiator is 1-(quinoxaline-6-ylcarbonyl)piperidine (CX516) or 1-(benzofurazan-5-ylcarbonyl)morpholine (BCM).

36. (Previously presented) The method of claim 1 wherein the AMPA receptor potentiator is 1-(benzofurazan-5-ylcarbonyl)morpholine (BCM).

37. (New) The method of claim 1 wherein the AMPA receptor potentiator is 1-(benzofurazan-5-ylcarbonyl)morpholine (BCM) or 1-(benzofurazan-5-ylcarbonyl)piperidine.

38. (New) The method of claim 1 wherein the AMPA receptor potentiator is 1-(benzofurazan-5-ylcarbonyl)morpholine (BCM) or 1-(benzofurazan-5-ylcarbonyl)-4-hydroxypiperidine.

39. (New) The method of claim 1 wherein the AMPA receptor potentiator is 1-(benzofurazan-5-ylcarbonyl)morpholine (BCM) or 1-(benzofurazan-5-ylcarbonyl)-4-cyanopiperidine.

40. (New) The method of claim 1 wherein the AMPA receptor potentiator is 1-(benzofurazan-5-ylcarbonyl)morpholine (BCM) or 1-(benzofurazan-5-ylcarbonyl)-4,4-difluoropiperidine.